President's Update




Spring 2014

G.P. "Bud" Peterson
President
Georgia Institute of Technology

Georgia Institute of Technology

Georgia Tech's Impact

Georgia Tech is experiencing a time of unparalleled momentum. Freshman applications have increased 150 percent in the past six years, and for the sixth year in a row our entering freshmen will be the best qualified and among the most diverse in the Institute's history.

Sophomore Mechanical Engineering major Nick Selby's freshman convocation speech, "We're at Georgia Tech — We can do that!" went viral, with more than 6 million views on multiple Internet platforms.

This increase is due to a combination of factors, including our decision to use the common application, our increased national visibility, and the impact of sophomore mechanical engineering major Nick Selby's freshman convocation speech going viral, with more than 6 million views across multiple Internet platforms. Whatever the reason, the word is getting out that Georgia Tech is the place to be.

Leadership, innovation, and the ability to think critically continue to be the hallmarks of a Georgia Tech education and are embedded in everything we do, from engineering to business and liberal arts. These are all represented in the way we teach with flipped classrooms, online courses, increased collaboration, and service learning all playing an important role. These skills are evident in the way students interact in their classes and in student competitions, and the way they address challenges from multiple vantage points, such as public policy, technology, sustainability, and business ethics.

On the east side of the connector, an atmosphere of innovation permeates Tech Square, which celebrated its 10th anniversary this year. Established companies and startups alike are attracted to the area for the expertise of our students, faculty, and staff, along with the creative energy that flows through the area.

On the north side of the campus, construction of the seven-story, 220,000-square-foot Engineered Biosystems Building (EBB) holds promise not only for those looking forward to interdisciplinary collaboration, but also for an entire growing industry in Georgia in biomedical science and human health. It is scheduled to open in June 2015.

Major renovations are giving new life and use to older facilities, and smaller changes such as new sidewalks, stone walls, and landscaping all contribute to the Georgia Tech campus becoming a thriving live/work/learn environment nestled amid metropolitan Atlanta for our more than 21,500 students and our many faculty, staff, and guests.

Our outstanding faculty, staff, and students continue to attract national attention. Among our notable visitors this academic year have been three cabinet secretaries and two international ambassadors. We were honored to host them, along with many groups and individuals from industry, government, K-12 schools, community groups, colleagues from other universities, and countless others. Our reach extends well beyond the Atlanta campus — through our global locations, our faculty's teaching and research, and our nearly 140,000 alumni living and working around the world.

Sincerely,

G.P. "Bud" Peterson, President

Left: An inexpensive, mobile solution to help nearly 2.6 billion people worldwide who don't have access to hygienic bathrooms won the 2014 InVenture Prize. The annual contest rewards students for big innovations that aim to solve the world's problems.

Progress on the Strategic Plan

Solid progress has been made toward the strategic goals set forth in Georgia Tech's 25-year strategic plan, Designing the Future.

www.strategicvision.gatech.edu

In partnership with the Institute's leadership team, a Strategic Plan Advisory Group led by Professor David Frost is providing recommendations to Institute leadership on matters pertaining to the alignment, effectiveness, and impact of the Strategic Plan. The Strategic Plan continues to be the foundation for both unit-level planning and new initiative development, with college and unit budget requests tied to progress on the goals outlined in the plan.

The expertise and associated leadership roles of faculty, staff, students, and alumni, along with research in areas of grand challenges, have resulted in increased national and international visibility and recognition. We have expanded our strategic partnerships with business, industry, and government in a number of areas, which is increasing both our national visibility and international reputation.

We continue to explore new ways of teaching. Among these are student living/learning communities, which are in their second year, and curriculum changes, including piloting the interdisciplinary X degree program.

In spring 2014 faculty from all six colleges came together to develop a Quality Enhancement Plan for Student Learning, one of two major components in Georgia Tech's 10-year reaffirmation process with the Southern Association of Colleges and Schools (SACS). Faculty members were invited to submit proposals based on concepts included in the Strategic Plan. Together the faculty has developed a five-year plan that combines sustainability, experiential learning, and community engagement. Like previous SACS QEPs including undergraduate research and the study-abroad program, this new plan has the potential to greatly enhance our students' learning experience.

Strategic Plan initiatives touch almost all areas of the Georgia Tech community, ranging from an increased investment in biology and biochemistry, and the Engineered Biosystems Building currently under construction, to a renewed emphasis on the arts. And we are continuing our ongoing pursuit of institutional effectiveness. Initiatives underway include the IT master plan and the Enterprise Data Management Project.

http://edm.gatech.edu

Global Impact

From China to Saudi Arabia, from France to Panama, educators, researchers, and business leaders seek Georgia Tech's counsel, expertise, and partnership. This deep level of engagement with our international partners is also helping us fulfill a primary goal of our Strategic Plan: to expand our global footprint and influence to ensure that we are graduating good global citizens.

Georgia Tech continues to attract some of the world's top students at the undergraduate and graduate levels. Our students represent 115 countries. Georgia Tech has research and education collaborations in more than 80 countries. Students study, work, or do research in 67 countries. Today, more than 46 percent of Georgia Tech students have an international experience by graduation.

With the opening of the Lafayette Institute in Metz, Georgia Tech is expanding its presence in France with a new resource center for industry and academic research laboratories. Lafayette Institute will be part of Georgia Tech-Lorraine, which is at the forefront of global engineering education and research.

Georgia Tech has taken a leadership role in the creation and dissemination of MOOCs, or Massive Open Online Courses.

In its first year of offering MOOCs, Georgia Tech enrolled more than 200,000 students. By February 2014, that number had grown to more than 575,000, who have access to some of the best professors, course material, and opportunities around the globe. Georgia Tech's vision is to define the 21st-century technological research university, and as such to explore technologies and instructional approaches in an effort to expand our role as a leading provider of the most effective education in the state, the nation, and the world. In January, the College of Computing welcomed its inaugural cohort of 380 students seeking the first professional Online Master of Science in Computer Science (OMS-CS) degree that can be earned completely through the massive online format. In summer 2014, a second round of OMS-CS students will be accepted. The degree, provided in collaboration with online education leader Udacity Inc. and AT&T, has received global attention.

http://c21u.gatech.edu/coursera/enrollment
www.internationalplan.gatech.edu
www.oie.gatech.edu/content/study-abroad

National Impact

Georgia Tech is making its mark in areas ranging from energy to cyber-security to space, with faculty, staff, and alumni offering expertise on panels, testifying before Congress, serving as media experts, and working in other leadership positions.

Georgia Tech has launched the Institute for Robotics and Intelligent Machines, bringing together robotics researchers from across the campus to support and connect research initiatives, enhance educational programs, and foster advances for the National Robotics Initiative. Students play a significant role in Tech's robotics research activities.

In February, Georgia Tech students and campus community members met with Homeland Security Secretary Jeh Johnson to discuss the Institute's efforts and expertise in cybersecurity.

www.news.gatech.edu/2014/02/17/secretary-homeland-security-visits-campus

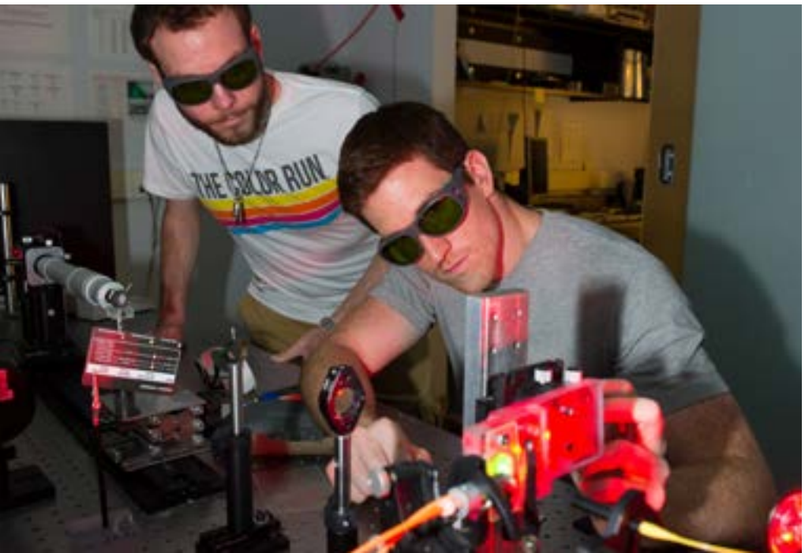
Johnson is one of three presidential Cabinet members to come to Georgia Tech in 2013-14. In August, Secretary of Commerce Penny Pritzker toured new integrated research/commercialization facilities and learned about the positive impact our research is having on children's health. Secretary of Energy Ernest Moniz was the keynote speaker at the Sam Nunn Policy Forum at the GTRI Conference Center in mid-April. Provost Rafael Bras accepted an invitation from Moniz to serve on the secretary's Energy Advisory Board.

Secretary of Commerce Penny Pritzker toured new integrated research/commercialization facilities at Georgia Tech.

The Department of Energy awarded the Georgia Tech Research Institute (GTRI) $1.7 million to help detect cyberattacks on our nation's utility companies. GTRI will work together with other experts in smart-grid technology to develop protocols and tools to detect such attacks. Through research in the Georgia Tech Information Security Center and GTRI, as well as startup accelerator programs, Georgia Tech is at the forefront of the cybersecurity industry and plays a critical role in enhancing the nation's security and the security of vast segments of its economy.

Georgia Tech has launched the Institute for Robotics and Intelligent Machines (IRIM), the newest of Tech's 10 Interdisciplinary Research Institutes (IRIs). IRIM brings together robotics researchers from across campus to support and connect research initiatives, enhance educational programs, and foster advances for the National Robotics Initiative (NRI), first announced by the White House in 2011 and officially established in 2012.

www.cc.gatech.edu/news/georgia-tech-launches-new-institute-robotics-and-intelligent-machines



Regional Impact

In October 2013, Georgia Tech celebrated the 10th anniversary of Technology Square, a multiuse development that has spurred the evolution of a renowned innovation ecosystem. A high-energy hub that has created an exciting environment in which innovation can flourish, it is a testament to what is possible through a partnership between higher education, the state, business, and industry.

Tech Square's Centergy One complex and the Tech Square Research Building provide an inviting environment for innovators and entrepreneurs. More than 100 companies are located in Centergy One, half of which are startups. Tech Square is home to the AT&T Foundry innovation center, the ThyssenKrupp Elevator Innovation Center, and Panasonic's auto innovation center, among others.

The Enterprise Innovation Institute (EI²) works with more than 2,500 organizations to provide training, education, and connections to Georgia Tech resources and partner organizations. The Advanced Technology Development Center (ATDC), an EI² program, has supported more than 400 technology startup companies that generated capital activity of more than $162 million.

The Georgia Manufacturing Extension Partnership assisted Georgia companies in creating nearly 1,000 jobs in the past year, while helping them grow sales by more than $451 million. Georgia Tech also received one of only two federal grants aimed at helping design manufacturing-outreach programs of the future.

In June 2013, the White House announced Georgia's Tech's creation of a new materials institute that further enhances this manufacturing focus. This institute is orchestrating Tech's leading-edge work in computational design of new materials.

Center: Ralph de la Vega, president and CEO, AT&T Mobility, speaks during the opening of the AT&T Foundry innovation center in Tech Square in August 2013.

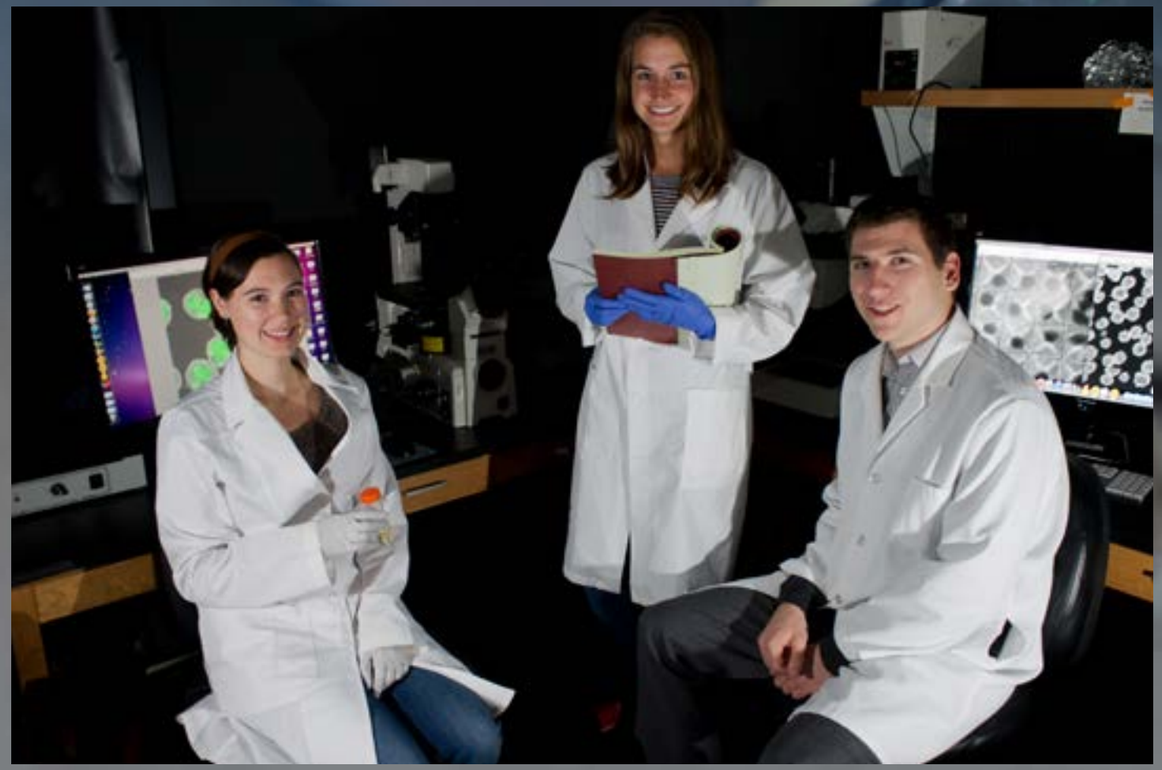
Research

Georgia Tech pursues leading-edge research with industry and government partners within a world-class ecosystem where promising new ideas are created, matured, and moved into the marketplace. We are advancing our reputation as a national leader in 12 core research areas, one of which is manufacturing with a specific focus on innovative materials. And with research expenditures of more than $730 million, we are among the top 10 in research expenditures for universities without a medical school.

An interdisciplinary, highly collaborative environment permeates the entire university. As an example, researchers from the School of Chemistry and Biochemistry and the Wallace H. Coulter Department of Biomedical Engineering received a grant to lay the foundation for a new treatment of glaucoma. The disease afflicts approximately 70 million people worldwide and is the second-leading cause of blindness. Researchers will test a new hypothesis for the disease's molecular basis.

Energy research has also been an active investigative area. Led by materials scientist Zhong Lin Wang, a team has created a backpack that captures mechanical energy from the natural vibration of human walking and converts it into electrical energy. This could revolutionize the way we charge small electronic devices, reduce the burden on nonrenewable power sources, and untether users from fixed charging stations.

www.livescience.com/43738-portable-clean-energy-development-nsf-bts.html



Collaboration

In addition to its interdisciplinary cooperation, Georgia Tech's impact is multiplied via external collaboration with education, business, government, and communities.

What was once an ad hoc researcher-to-researcher relationship with the U.S. Centers for Disease Control and Prevention (CDC) has now been formalized. It has the potential to advance the state of the science to facilitate scientific innovation (e.g., patents and publications), new external funding, and novel collaborative relationships. The CDC is looking to add an engineering perspective to its problem solving and development of global health solutions.

http://ipat.gatech.edu/cdc-georgia-tech-research-awards

www.cdc.gov/od/science/technology/innovation/seeds.htm

Since 2007, Georgia Tech and Children's Healthcare of Atlanta have collaborated on more than 130 pediatric research projects. Among them is the Raschbaum Grabber, a surgical tool nearing prototype phase, designed to help pediatric surgeons work more efficiently in infants' tiny digestive tracts.

http://ipat.gatech.edu/quick-wins-excite-georgia-tech-childrens-healthcare-atlanta-partnership

InfinitEnergy is an innovative partnership between colleges, universities, state and local governments, and commercial entities, all working to stimulate and promote the understanding of, innovation in, and use of alternative energy technologies. The partners will develop a community-based applied alternative technology laboratory on the new Georgia Tech campus in Savannah.

http://savannah.gatech.edu/infinitenergy

Georgia Tech is fostering agriculture leadership, as well as a manufacturing resurgence. Agriculture is an estimated $56 billion industry, or about 16 percent of the state of Georgia's economic output. Georgia Tech is collaborating with the University of Georgia in high-tech research in manufacturing and agriculture, including serving Gainesville poultry corporations and south Georgia crop farmers.

Students

Always a magnet for some of the nation's, if not the world's, most highly qualified students, Georgia Tech continues to attract a dynamic freshman class. It would be hard to top last year's entering class, but once again this will be the best-qualified, most diverse class in Tech's history. Our student population now has 31 percent women. The 2013 freshman class includes 37 percent women, the largest number ever enrolled at Georgia Tech. Many of our new freshmen, leaders in their high schools and communities, will bring their skills to Georgia Tech's 400-plus student organizations and numerous community volunteer opportunities. Students also have the opportunity to participate in living-learning communities like Startup House, designed to give budding entrepreneurs a chance to live out their ideas.

Programs such as the annual InVenture Prize competition and Ideas to Serve provide students with an opportunity to be innovators and develop solutions to some of society's problems while they're still in college.

A robust support for the arts, known as Arts@Tech, is helping students cultivate creative and analytical talents. This spring Georgia Tech held its third annual Clough Art Crawl, transforming Clough Commons into an art gallery featuring poetry, photography, painting, film, music performances, and sculptures by undergraduate and graduate students. Arts@Tech spans performance, exhibition, research, education, and community engagement.

In 2013, students formed the Georgia Tech Armed Forces Student Association, and the Division of Student Affairs established a Veterans Resource Center on campus. Also this year, a task force of faculty, staff, and students was formed to review the state of campus mental-health services, and many of its recommendations are being implemented.

Above: The Student Government Association holds an open session of the Undergraduate House of Representatives in one of the Clough Commons lecture halls.

Tech students continued to earn prestigious honors. Melissa McCoy, a 2012 graduate in chemical and biomolecular engineering, was named a Rhodes scholar. She will study at Oxford University. Nicholas Picon, a fourth-year aerospace engineering major, won a Marshall scholarship and will study at Cranfield University and King's College London. Five Georgia Tech students were selected to participate in NASA's 2013 class of Space Technology Research Fellows, making Tech the most widely represented institution in the program.

Georgia Tech's 17 intercollegiate sports teams continue to provide opportunities for students to excel, and our Graduation Success Rate (GSR) for student athletes rose to 79 percent, an all-time high. Tech athletes reached a record-high 985 on the Academic Progress Report (APR), which is calculated by assessing each scholarship student-athlete's retention and eligibility. Eight of our 17 teams scored a perfect 1,000, and the football team was in the top 10 percent in the nation, with its highest APR ever.

Faculty and Staff

Georgia Tech's faculty and staff continue to pursue excellence in teaching, research, and service, which enhances the Institute's global reputation. Since the program's inception in 1995, Georgia Tech faculty members have received 192 National Science Foundation CAREER awards, among the highest number nationally.

Steven French was named dean of the College of Architecture, Paul Goldbart was named dean of the College of Sciences, and Maryam Alavi was named dean of the Scheller College of Business.

Last fall, Georgia Tech Parking and Transportation Services received a PACE Award, winning the Government Champions/State Employer category for its efforts toward creating sustainable and alternative transportation options for campus.

www.news.gatech.edu/2013/11/20/pace-awards-name-tech-state-employer-year

The Georgia Tech Police Department (GTPD) joined the ranks of a select group of 59 college and university police departments in the country accredited by the Commission on Accreditation for Law Enforcement Agencies (CALEA). The department installed 26 cameras along major arteries leading into campus. They are monitored by six students at an enhanced-operations center, providing officers on patrol an extra set of eyes.

Left: Kari Watkins, civil and environmental engineering assistant professor and Georgia Tech alumna, is tackling Atlanta's transit challenges through apps such as Cycle Atlanta and OneBusAway. Cycle Atlanta, launched with collaboration from the City of Atlanta and Chris Le Dantec, assistant professor in literature, media, and communication, uses a smart phone's GPS to track cycling routes. As a member of the freshman chemistry team, Kimberly Schurmeier is constantly reevaluating each group of students and herself, looking for ways to improve student learning and teaching.

The Campus

For the sixth consecutive year, Georgia Tech was recognized by the Princeton Review's Green Honor Roll for its overall sustainability program and also was among a select number named to Tree Campus USA for 2013. Engineering News-Record named Steven Swant, EVP for Administration and Finance, to its 2013 Top Newsmakers list for his leadership role in sustainability for the campus, as well as for sustainability best practices for overall business planning.

The library, connected to the Clough Commons, is being revitalized as we maximize existing facilities and integrate sustainable design. The legislature approved $1.7 million for planning and design of the Price Gilbert Library/Crosland Tower renewal. Once complete, it will serve as a resource for curated content, expert guidance, and scholarly communities. Most of the library collections are being moved to the EmTech Library Service Center on Emory University's Briarcliff property. Through this partnership with Emory, we will create a shared collection. New and improved library services, such as rush/on-demand and email delivery, will ensure fast delivery of material.

Investing in the Future

Our national and international recognition and excellence would not be possible without the ongoing engagement and support of the many friends of the Institute, along with our partnerships with government, the community, business, industry, and NGOs.

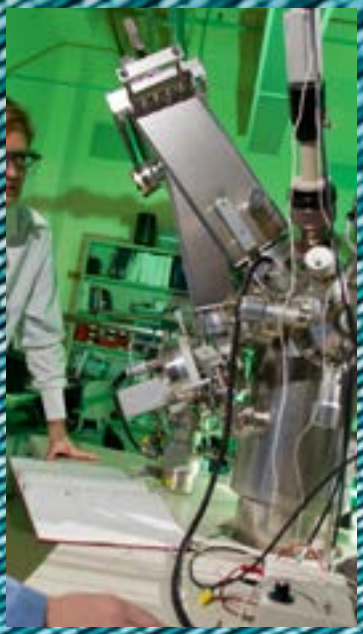
Through Campaign Georgia Tech, resources are facilitating advances in everything from scholarships and assistantships to construction and renovations. With $1.35 billion received as of March 2014, we are well on our way toward meeting our ambitious goal of raising $1.5 billion by December 2015.

One goal of Campaign Georgia Tech is to create a $50 million endowment to fully endow the G. Wayne Clough Georgia Tech Promise program. The Tech Promise program puts a Georgia Tech education within reach of every qualified Georgia resident, regardless of family income. More than 200 students, with an average family income of $21,000 per year, are currently participating in the program, and the endowment has surpassed $47 million, very close to our goal.

In so many ways, we are preparing our students to be leaders and innovators. They are designing the future and changing the world, our nation, and our communities, something we have been doing at Georgia Tech for almost 130 years.

High school students participating in Makers Camp build small quad copters in Georgia Tech's Invention Studio and then perform test flights. The camp is funded by the National Science Foundation as part of the national AMP-IT-UP initiative.

www.president.gatech.edu

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